



006174

सत्यमेव जयते

# CALIBRATION CERTIFICATE



भारत सरकार  
उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय  
Government Of India  
Ministry Of Consumer Affairs, Food and Public Distribution  
राष्ट्रीय परीक्षण शाला (पूर्वी क्षेत्र)

## National Test House

ब्लाक-सी.पी., सेक्टर-5, साल्ट लेक सिटी, कोलकाता-700 091

Block - CP, Sector - V, Salt Lake City, Kolkata - 700 091

Phone No : 91-33-2367-3429 / 3430 / 3431 / 3871 / 9741 / 3308 , Fax No : 91-33-2367- 3871 / 3308

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031295

भारत सरकार  
राष्ट्रीय परीक्षण शाला (पूर्वी क्षेत्र)  
National Test House (Eastern Region)  
ब्लाक-सी.पी., सेक्टर-5, साल्ट लेक सिटी, कोलकाता-700 091.  
Block - CP, Sector -V, Salt Lake City, Kolkata - 700 091.

FORM NO :NTH/SL/F/5



NABL ACCREDITED LABORATORY

006124

**CALIBRATION CERTIFICATE  
of THREE PHASE ENERGY METER**

**Certificate No.** NTH(ER)/CAL(EL)/2008/0017 **Date** 24.04.2008

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M/s. M B Control & Systems Pvt. Ltd.,  
31/1, Ahrurpur Road,  
Kolkata - 700 019

MBCS/08-09/1701/055939  
Dated: 22.04.2008

Three Phase Energy Meter

Model: PM130EH PLUS

Make: SATEC

Serial No. 737363

22.04.2008

NTH/WATT/01 and on the lines of IEC 62053  
- 22 (2003)

Temperature: 25±1 deg C

Relative Humidity: 65 - 75%

Roktek Power/Energy Calibrator, USA.

NPL, New Delhi

NTH

NTH(ER)/CAL(EL)/2008/0017

**6. Traceability of Measurement**

7. Calibration Carried out at (NTH/On site)

**8. NTH Identification Mark on the Label.**

Calibrated by

V. Sivaguru

SA (Elect.)

Checked by

Avijit Das

Sc. SC (Elect.)

Approved by

Avijit Das

Sc. SC (Elect.)



031216

भारत सरकार

Government Of India

राष्ट्रीय परीक्षण शाला (पूर्वी क्षेत्र)

ब्लाक-सी.पी., सेक्टर-5, साल्ट लेक सिटी, कोलकाता-700 091.  
Block - CP, Sector -V, Salt Lake City, Kolkata - 700 091.

FORM NO :NTH/SL/F/5



## CALIBRATION CERTIFICATE

006121

## of THREE PHASE ENERGY METER

Certificate No. Date

NTH(ER)/CAL(EL)/2008/0017 24.04.2008

Date of Calibration

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23.04.2008

02

02

## 9. Results of Test:

As desired the sample was subjected to accuracy test of energy, on the lines of IEC: 62053 – 22 (2003) and the results given below:

## Parameter: AC Power at 110V, 1A at 50Hz

Sl. No.	Specified Current	Power Factor	Value of Set Current	Error observed in %	Error limits as per IEC: 62053 – 22 (2003) in %	Expanded Uncertainty, k=2
1	0.01 $I_n \leq I \leq 0.05 I_n$	UPF	0.01 $I_n$	0.38	$\pm 0.4$	6.17E-03
2			0.045 $I_n$	0.35	$\pm 0.4$	6.80E-03
3	0.05 $I_n \leq I \leq I_{max}$	UPF	0.05 $I_n$	0.18	$\pm 0.2$	6.24E-03
4			$I_{max}$	0.16	$\pm 0.2$	1.47E-02
5		0.5Lag	0.02 $I_n$	0.44	$\pm 0.5$	1.02E-03
6	0.02 $I_n \leq I < 0.1 I_n$	0.8Lead	0.02 $I_n$	0.48	$\pm 0.5$	1.50E-03
7		0.5Lag	0.09 $I_n$	0.44	$\pm 0.5$	9.92E-04
8		0.8Lead	0.09 $I_n$	0.45	$\pm 0.5$	1.84E-03
9		0.5Lag	0.1 $I_n$	0.24	$\pm 0.3$	2.14E-03
10	0.1 $I_n \leq I \leq I_{max}$	0.8Lead	0.1 $I_n$	0.23	$\pm 0.3$	1.84E-03
11		0.5Lag	$I_{max}$	0.26	$\pm 0.3$	2.94E-03
12		0.8Lead	$I_{max}$	0.27	$\pm 0.3$	1.52E-02
13		0.25Lag	0.1 $I_n$	0.45	$\pm 0.5$	4.10E-03
14	0.1 $I_n \leq I \leq I_{max}$	0.5Lead	0.1 $I_n$	0.42	$\pm 0.5$	3.20E-03
15		0.25Lag	$I_{max}$	0.43	$\pm 0.5$	4.71E-02
16		0.5Lead	$I_{max}$	0.44	$\pm 0.5$	4.65E-02

EUC\* - Equipment Under Calibration

The meter complied to the requirements of Cl. 8.1 of IEC: 62053 - 22(2003) for accuracy - 0.2 S Class

10. Next calibration due on: 23.04.2009

Calibrated by  
V. Sivaguru  
SA (Elect.)Checked by  
Avijit Das  
Sc. SC (Elect.)Approved by  
Avijit Das  
Sc. SC (Elect.)